

wherein the -O-CH₂-O- linkage within the backbone of the prepolymer comprises a hydrolyzable moiety.

22. The degradable prepolymer of claim 21, wherein the prepolymer degrades upon reacting with an acid composition comprising a concentration of about 2.0N or less.

23. A degradable prepolymer product for explosive and propellant compositions prepared by condensing a diol with formaldehyde in a ratio wherein substantially all of the formaldehyde reacts, so that at least one -O-CH₂-O- linkage is formed within the backbone of the prepolymer as a hydrolyzable moiety and the formation of terminal -O-CH₂-O- groups is minimized.

24. The degradable prepolymer product of claim 23, wherein the diol comprises a molecular weight of from about 400 to about 500.

25. The degradable prepolymer product of claim 23, wherein the diol comprises polyethylene glycol comprising a molecular weight of about 400.

26. The degradable prepolymer product of claim 25, wherein the diol comprises polycaprolactone comprising a molecular weight of about 500.

27. A degradable prepolymer product for explosive and propellant compositions prepared by the steps of:

condensing a diol with formaldehyde so that at least one -O-CH₂-O- linkage is formed within the backbone of the prepolymer as a hydrolyzable moiety; and,

reacting the prepolymer with a substance that removes all -O-CH₂-O- terminal chains.

28. The degradable prepolymer product of claim 27, wherein the substance comprises a base or a base and hydrogen peroxide.

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29. The degradable prepolymer product of claim 28, wherein the diol comprises polyethylene glycol comprising a molecular weight of about 400.

30. The degradable prepolymer product of claim 28, wherein the diol comprises polycaprolactone comprising a molecular weight of about 500.

The following claims have been amended (marked up version is attached to this filing):

3. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises a molecular weight of from about 2,000 to about 10,000.

4. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises monomer units of from about 300 to about 1,000 molecular weight.

5. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises monomer units of from about 400 to about 500 molecular weight.

6. (Once Amended) The prepolymer of claim 21, wherein the prepolymer comprises from about two to about ten -O-CH₂-O- linkages within the backbone of the prepolymer.

8. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises a hydroxy-terminated prepolymer.

9. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises poly(PEG-400 formal).

10. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises poly(PCL-500 diol formal).

11. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises a functionality of from about 1.7 to about 2.3.

12. (Once Amended) The degradable prepolymer of claim 21, wherein the prepolymer comprises a functionality of approximately 2.